

THE NINTH LAW

Commitment Crystallizes Outcome

A sealed-field toy model demonstrating commitment integral ■, crystallization threshold ■■, and dominant branch selection by $\text{argmax} \, \blacksquare_b$ — without temporal evolution.

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“Selection occurs by recognition, not causation.”

Law Statement

In a sealed orientation field, the realized worldline is the branch whose commitment integral exceeds the crystallization threshold and dominates all alternatives.

$$\blacksquare = \int w(s) \cdot |\Theta(s)|^p ds$$

Crystallization: $\blacksquare \geq \blacksquare_{\text{th}}$

Selection: $b^* = \operatorname{argmax}_b \blacksquare_b$

Here, s is a sealed path index (not time). $w(s)$ is a structural weighting. $p \geq 1$ amplifies coherence over inconsistency.

Toy Model: Assumptions

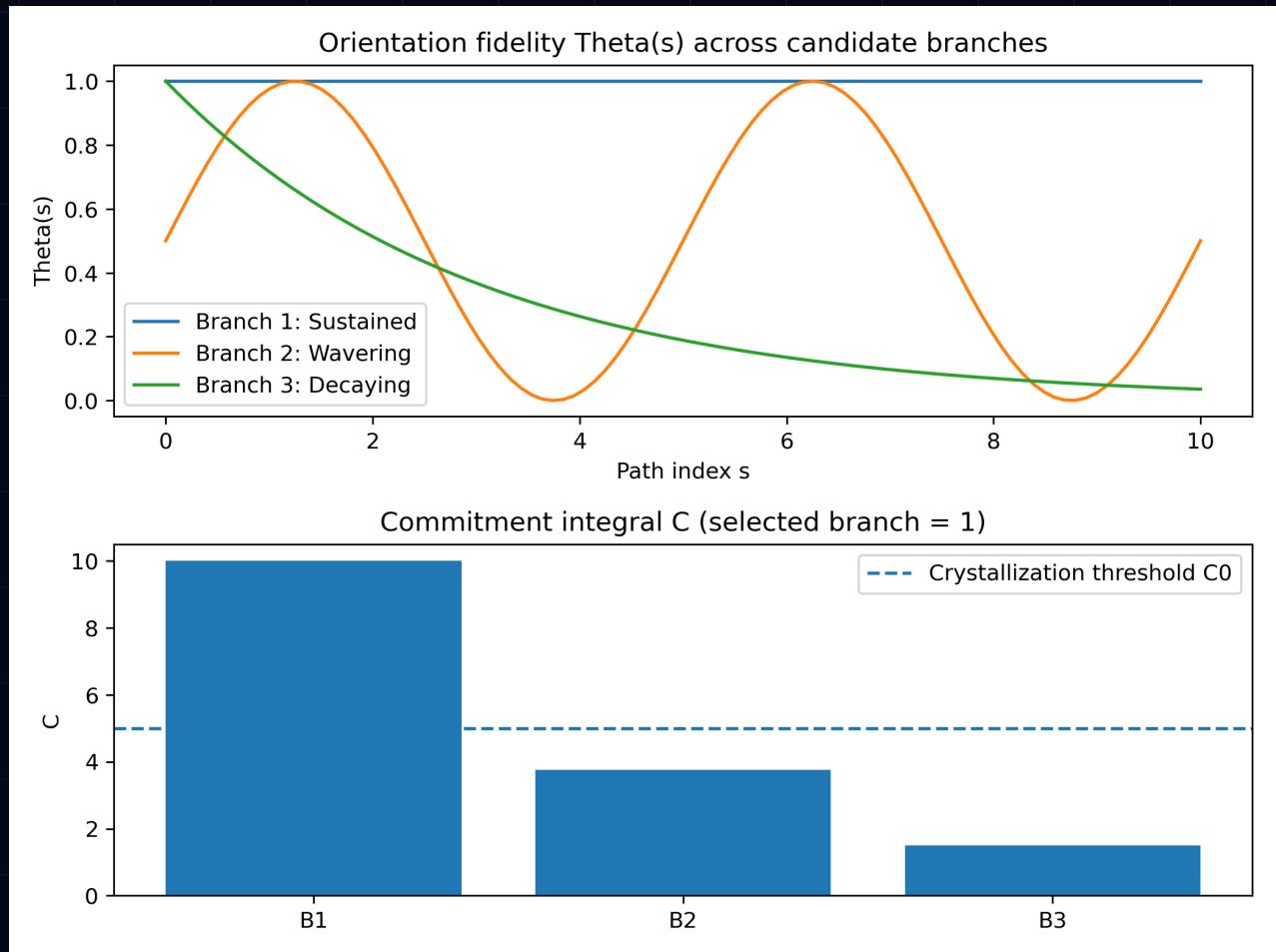
- $s \in [0,10]$ discretized to 100 points (numerical integration).
- $w(s) = 1$ (uniform weighting) for the primary run.
- $p = 2$ (quadratic nonlinearity).
- $\blacksquare\blacksquare = 5.0$ (illustrative crystallization threshold).
- Three candidate branches with distinct $\Theta(s)$ patterns: sustained, wavering, decaying.

Branch 1 (Sustained): $\Theta(s)=1.0$

Branch 2 (Wavering): $\Theta(s)=0.5+0.5\cdot\sin(2\pi s/5)$

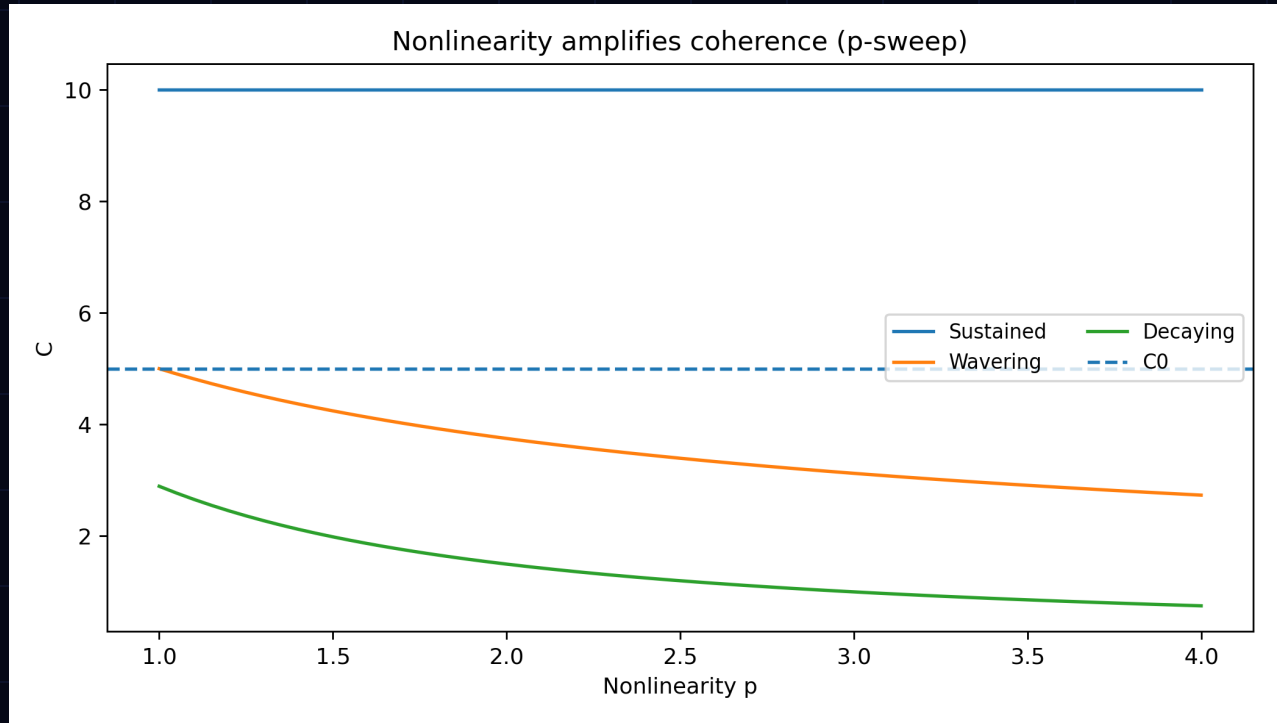
Branch 3 (Decaying): $\Theta(s)=\exp(-s/3)$

Primary Run: $\Theta(s)$ + ■ Values



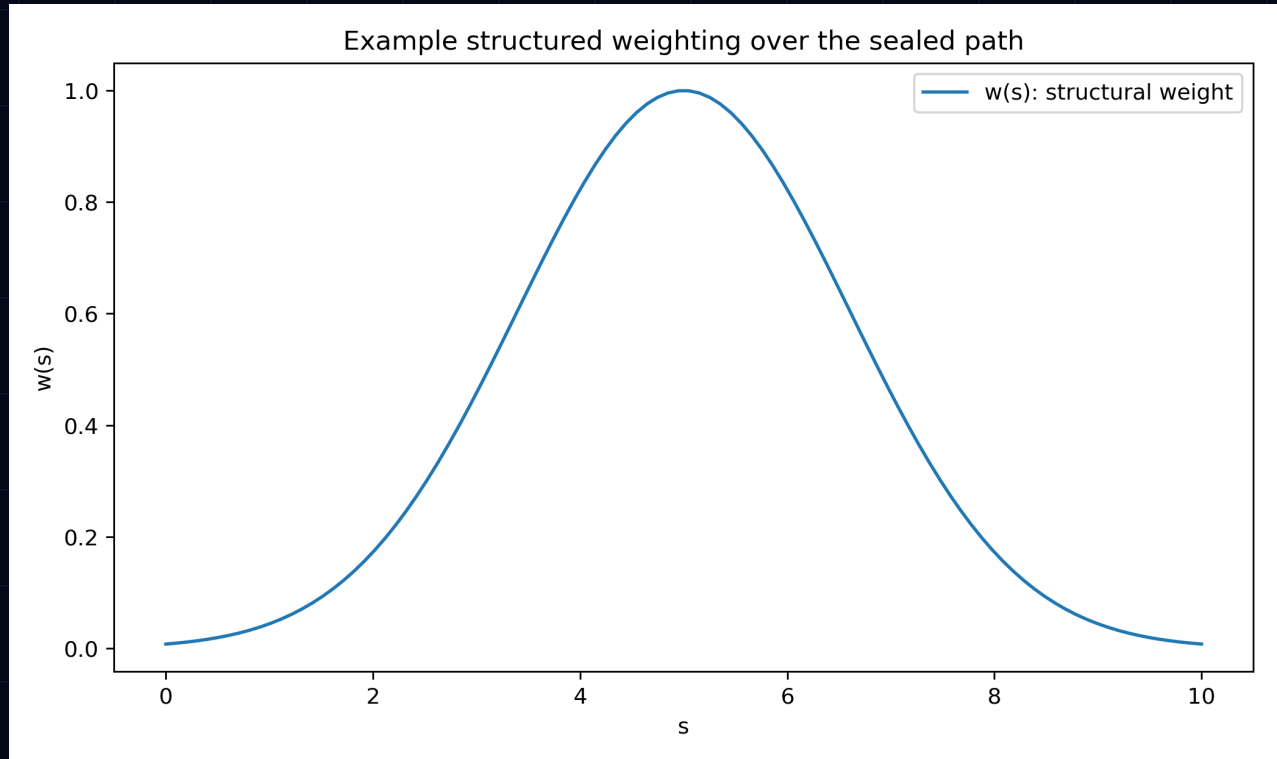
Computed: ■■=10.000, ■■=3.750, ■■=1.499. Threshold ■■=5.000. Selected branch: 1.

Coherence Amplification: p-Sweep



As p increases, coherence dominates: wavering and decaying paths lose effective commitment mass, while sustained alignment remains robust.

Structural Weighting $w(s)$



$w(s)$ can encode structural importance along the sealed path: certain regions contribute more to commitment than others. Included as an explicit lever for future extensions.

Reference Implementation (Python)

```
import numpy as np

S = np.linspace(0, 10, 100)
w = np.ones_like(S)
p = 2.0
C_0 = 5.0

Theta1 = np.ones_like(S)
Theta2 = 0.5 + 0.5*np.sin(2*np.pi*S/5)
Theta3 = np.exp(-S/3)

def commitment_integral(Theta, w, p, S):
    return np.trapz(w*np.abs(Theta)**p, S)

Cs = [commitment_integral(T, w, p, S) for T in (Theta1, Theta2, Theta3)]
worldline = np.argmax(Cs) + 1
crystallized = [C >= C_0 for C in Cs]
print(Cs, crystallized, worldline)
```

Implementation note: integral is over sealed path index s (not time). Selection is recognition of maximum ■.

CLOSING SEAL

$\Theta \rightarrow \blacksquare \rightarrow \text{Actuality}$

Only the coherent path remains.

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